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The Hatayama Code and the question of meaning - resistance and interpretation in short fiction as practice research

Citation for published version:

Alexander, J 2019, 'The Hatayama Code and the question of meaning - resistance and interpretation in short fiction as practice research', *RoundTable*, vol. 2, no. 2. <https://doi.org/10.5334/rt.58>

Digital Object Identifier (DOI):

[10.5334/rt.58](https://doi.org/10.5334/rt.58)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Publisher's PDF, also known as Version of record

Published In:

RoundTable

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The Hatayama Code

JANE ALEXANDER

CREATIVE PIECE

Version number: 1

Produced by Senior Digital Analyst for: Government Digital Service

Classification: OFFICIAL

This briefing document reviews the background to, and summarises current understanding of, the phenomenon known as ‘the Hatayama Code’. For detailed analysis, strategic recommendations and budget implications please refer to Committee Report CM 10356.

BACKGROUND

The Attention Symphony was originally conceived by sound artist Tomoko Hatayama, and created as part of an interdisciplinary research project hosted by the National Centre for Contemporary and Digital Media. The project was

Jane Alexander is director of prose fiction on the MSc in Creative Writing by online learning at the University of Edinburgh, and an associate lecturer in creative writing with The Open University. Her first novel *The Last Treasure Hunt* (Saraband, 2015) was selected as a Waterstones debut of the year, and her short fiction has won prizes and been widely published. She is the recipient of a Scottish Arts Council New Writers Bursary and a Creative Scotland research award, and in 2016 was awarded a Hawthornden International Writing Retreat Fellowship. Jane has recently completed a creative writing PhD at Northumbria University.

intended to produce a sound map of cyberspace – both the worldwide web and the physical internet that underlies the surface network of websites and links.

Hatayama's composition was generated according to algorithms that translated the weight of internet traffic into a musical performance. The world's most popular online locations were represented by sound frequencies across the full range of ten octaves audible to the human ear. The volume and duration of each note corresponded respectively to the total number and length of visits to that site; access via static and portable devices was distinguished by timbre, and visits from each of the seven continents differentiated by key. The aim was to make audible the global patterns of internet use, allowing listeners to hear how we disperse our attention in the online space. Due to the quantity of data that was required to be processed, the symphony was unable to present a real-time sound map. Instead, it played continuously with a delay of 24 hours, so listeners would hear an abstracted rendition of what the world had paid attention to on the previous day.

During initial playback sessions, the project team had already recognised that the sound output appeared to deviate slightly from the data inputs. The algorithms were checked and re-checked, first by software engineers at the Institute and later, once the symphony had been made public and the level of interest and potential significance had become clear, by independent experts. All algorithms were found to be complete, leading to the suggestion that the anomalous elements must be expressing some unknown additional factor.

According to Hatayama: 'We tried at first to eliminate the anomaly, but it was a persistent effect, what sounded like this top layer of data over the music we'd expected to hear. We thought of it as a glitch, but the more we listened we began to hear it as something intricate, delicate.'

PUBLIC RESPONSE

The Attention Symphony was launched, complete with anomaly, at the London FutureFest. Live streaming commenced simultaneously, attracting some interest from UK media and online technology communities. The first observation of a repeating pattern in the symphony was made six days later, by a chatroom user at technophile.eu.

There followed a period of increasingly fierce debate, initially within the tech community but spreading via social media. Large scale repetitions were an expected effect of the Symphony, as patterns of attention followed established

paths at particular times of the day: for instance, a series of regular peaks in volume representing the 70 million daily searches via China's baidu.com, followed several hours later by a C major surge from North America [see full analysis at CM 10356 section 7]. However, a growing number of listeners claimed to have noticed recurring patterns on a smaller scale, identifiable through the arrangement of fractional moments of silence. Initially these claims were dismissed as simply demonstrating the human desire to find meaningful patterns in random data; meanwhile those listeners who were alert to the repetitions insisted the symphony must be measuring something we hadn't known could be measured.

Though computer analysis found no evidence of small-scale regular or periodic patterning, and such patterning could not be – and still has not been – objectively verified, the weight of subjective opinion was sufficient to suggest that there were indeed unexpected repeating elements within the symphony, occurring only in what Hatayama had referred to as the 'top layer of data', i.e. those anomalous sound elements which seemed to be expressing some unknown factor.

The question of meaning was first raised by users of social media, and was picked up swiftly by the mainstream media. Questions as vague as what does it mean? were reformulated as what is the Attention Symphony trying to tell us? The term 'Hatayama Code' was coined by the Guardian newspaper, and went viral. By this time the symphony livestream was being played continuously by many millions of devices in Europe and the US, the subcontinent, south-east Asia and Australasia – gaining sufficient attention for its location to become clearly audible in the sound map, so that the music performed its own popularity. And though a significant body of experts still maintained that any apparent patterns in the symphony were simply evidence of apophenia, the public imagination had been captured by the notion of a hidden message to ourselves; something we could understand, if only we could discover a way to read it. Artistic translation emerged as a popular decryption strategy. Dancers translated the music into improvised movement; artists, professional and amateur, attempted to paint and sculpt the sonic patterning, with some striking similarities of colour, shape and texture [see selective summary at CM 10356 section 18(2)(b)].

None of these activities can be said to have illuminated the phenomenon.

Early fears that the Hatayama Code could pose a threat to global cyber-security have dissipated over the 12 months since it was first detected. The possibility of alien contact, though widely discussed online, is considered extremely unlikely.

Hatayama herself has noted that to pay attention is a political act, one that confers authority on, for instance, religious institutions, governments, parents and educators. (Hatayama has distanced herself from the notion of a Hatayama Code, preferring to talk of an 'Attention Armature' – a term not widely used, which indicates how the anomalous sound elements are supported by, or moulded around, both the world-wide web and its physical infrastructure.)

Others have commented on the transactional nature of attention (see, for instance, Duckett and Macfarlane, 2003) and speculated on the role of global corporations in the contemporary attention economy. The popular theory that the phenomenon would be revealed as a highly sophisticated marketing tactic was however undermined when attempts to reverse-engineer the anomalous sound elements and map them back onto the worldwide web failed to reveal any particular connections between the various loci of attention.

What recurs is the idea of meaning. We cannot say for certain that there is meaning in what we hear, and yet we feel certain that, just beyond the limits of our ears, there is something we wish to tell ourselves about ourselves. For many of us, the Hatayama Code seems to suggest a way of thinking about the least satisfactory aspects of our digital existence. Certain compulsive, repetitious behaviours. A hollowing, or loss of self. A sense of dispersion, diminution, fragmentation. In the process of writing this report, I have tabbed repeatedly into my browser and cycled through a familiar routine of websites, depositing on each a trace of my attention [full list supplied at Appendix D]. I did not choose to visit them in the sense of making a conscious decision to do so; I had no purpose in going there, and once there I was not sure why I had come.

It has been argued [CM 10356 section 19] that what we choose to attend to is not, in fact, important. It is merely an excuse for looking, and the act of our looking is what matters. We look at one thing, and for another thing that is quite different.

The repetitions in the Attention Symphony display this characteristic: while volume and pitch are variable, the temporal arrangement is consistent. We think, therefore, that the emphasis, the expression, may be changing; but that the message encoded there remains the same.

If we could read this message, we would know what it is that we are really attending to. We would know something about ourselves.

CURRENT AND FUTURE RESEARCH

At the time of writing, the Hatayama Code is the focus of 81 major research projects [summarised at CM 10356 section 32(3)] employing methodologies that range from pattern analysis and topological data analysis to ethnomathematics and medical imaging. Thus the full machinery of human and artificial intelligence grinds away at this puzzle we have set for ourselves.

Meanwhile, there is a growing body of thought [CM 10356 section 12(1)(c)] that sets itself in opposition to this analytical approach. Each fresh hypothesis, each layer of interpretation, takes us further from meaning; the more we study this phenomenon, the less we will understand. To close our eyes and listen is to come close to understanding, as close as we will ever get; like the difference between a word whose shape we recognise, which balances on the tip of the tongue, and an unfamiliar word spoken in a language we have never known.

COMMENTARY

THE QUESTION OF MEANING: RESISTANCE AND INTERPRETATION IN SHORT FICTION AS PRACTICE RESEARCH

‘The Hatayama Code’ was written as part of a short fiction collection that comprised the creative element of my practice research thesis – which, as a whole, investigated the ways in which short fiction may be a particularly appropriate form for illuminating and interrogating human experiences of science and technology through the creation of uncanny affect. The uncanny I was concerned with was the Freudian concept, defined (in so far as this elusive concept ever can be defined) as a specific form of unease that involves the familiar becoming unfamiliar and unsettling, and which has to do with the return of something that has been repressed: “something which ought to have remained hidden but has come to light” (132).

One of my aims in working with the short fiction form was to create uncanny affect not just at the level of the individual story, but across the

collection as a whole; as the project progressed, though, this presented me with some difficulties. I found myself repeatedly deploying a limited repertoire of tropes and techniques, with the result that a story which might prompt unease when read in isolation risked its effect becoming dulled through over-familiarity when read in the context of the collection as a whole. A second difficulty occurred where the creative work became prescriptive in meaning, and too clearly an illustration or working-out of psychoanalytical theories of the uncanny. Webb and Brien have recognised how such problems can arise when creative writing is located within the academy, where “Focus on the production of knowledge can generate art that is didactic, and ‘academic’” (1). A related notion frequently expressed by writers of fiction is that the writing is most successful when the process is ‘unknowing’. Hanif Kureishi suggests “There is a sense – there has to be a sense – in which most writers do not entirely understand what they are doing” (17), while for Kathryn Heyman “mystery is critical to the process of creative unknowing. ... In order to fully engage with the act of creation that fiction requires, it is necessary to first be utterly lost” (63).

My failed fictions, my un-uncanny stories, were those in which a schematic approach to creating uncanny affect had left insufficient space either for my own unknowing or that of the reader; for multiple or ambiguous readings, and for the uncertainty that I increasingly understood to be an essential characteristic of the uncanny as both a lived experience and a literary mode.

This recognition prompted a conscious step into unknowing. Letting go of strategies such as the intentional deployment of uncanny tropes and the careful identification of potentially uncanny themes and images, I began instead to pursue the uncanny by turning away from it – a movement that was necessary for me to escape from my own fixed and persistent notions of what constituted uncanny fiction. And it was not only in the processes of writing that I courted uncertainty, but also the products – the creative artefact. Increasingly, I aimed to produce stories that gestured towards meaning without that meaning ever becoming explicit. Quite consciously, I was attempting to articulate something that I felt to be just beyond my own understanding – a seemingly paradoxical notion, but one recognised by a number of short story theorists, such as Valerie Shaw as cited by Mary Rohrberger:

“The short story's success often lies in conveying a sense of unwritten, or even unwritable things: the story teller accepts the limitations of his art, and makes his freedom an aspect of those same restrictions”. The silence

of which Shaw writes is at the very base of the short story and the lyric: the that that is unsaid but somehow manages to be said (43).

‘The Hatayama Code’ was one of a number of stories I engineered to be recalcitrant – a term used by Austin M. Wright to describe various kinds of withholding characteristic of 20th century short fiction. My story describes the movement of collective virtual attention made audible; an apparent promise to illuminate what the objects of our surveillance reveal about us, but one which withholds enlightenment, revealing only further questions: ‘What recurs is the idea of meaning. We cannot say for certain that there is meaning in what we hear, and yet we feel certain that, just beyond the limits of our ears, there is something we wish to tell ourselves about ourselves’ (‘The Hatayama Code’). The format of a briefing document was inspired by China Miéville’s ‘The Condition of New Death’, which takes the form of an official document that summarises an unexplained global phenomenon. I used this model to develop ideas around the relationship between humans and technologies of surveillance that had begun to appear in earlier stories, exploiting a factual, reporting mode to allow for a kind of over-explanation that reveals little. In my story the identity of the intradiegetic author is unclear, beyond their position as ‘Senior Digital Analyst for: Government Digital Service’ (‘The Hatayama Code’). A brief slippage of the narrative voice – the emergence of an ‘I’, the shadow of a narrator’s personal concerns – suggests the individual behind the narrative, but only fleetingly: their inner life remains inaccessible, and likewise the readership for this briefing document remains undefined. The inclusion of references to specific sources of further information, documents which are of course non-existent, is intended to imply a wider context for this report but also to intrigue the reader with the prospect of an explanation that remains always just beyond reach.

However necessary I judged these various strategies of recalcitrance to be to the demands of the project itself, writing a series of stories that were so concerned with what remains inarticulable – stories designed, in a sense, to resist interpretation – could appear counterproductive in the context of creative writing as research. But the knowledge generated by fiction as research is not made visible only, or even chiefly, through analysis of its easily recoverable meaning. Rather it results from “process, practice, product and critical reflection ... separately but also in combination” (National Association of Writers in Education). In my practical experience, this has meant the critical examination of insights that emerge from the creative work; work that often reflects back on

its own creative processes. Just as with the story's Attention Symphony, the possibility of meaning has tended to emerge in my work through my attention to repeating patterns within the whole – and it was in the context of a number of other stories that I was able to understand 'The Hatayama Code' as performing a commentary on its own epistemological status – speaking to the location of my creative work in the academy, and its position as part of a methodology of knowledge production.

My fictional Attention Symphony incorporates the mechanisms of its composition, 'its location ... clearly audible in the sound map' ('The Hatayama Code'); 'The Hatayama Code', too, reflects the conditions of its own composition. In its concern with how we respond to the kinds of discoveries – or 'anomalous elements' – that disrupt existing models of knowledge, and with the investigative strategies we might bring to bear on a creative work in order to make explicit its potential contribution to knowledge, it stages a dialogue between analytical research and a more intuitive or interpretative mode of discovery. It makes visible an urgent collective desire for self-knowledge, for 'a hidden message to ourselves; something we could understand, if only we could discover a way to read it' – and simultaneously demonstrates that a single, empirical meaning is not to be derived from the artwork, its analysis or its 'artistic translation' ('The Hatayama Code'). In this way, the story gestures to how we should understand its capacity to generate knowledge – not as a text that can yield a 'correct' reading but one that can be interpreted by the writer-researcher to present a more provisional form of knowledge: "a story about the work and its findings, one based on context, values, and the habitus of those involved that is, therefore, limited and contingent" (Webb and Brien).

The uncanny 'disturbs any straightforward sense of what is within and what without, and alerts us to the "foreign body" within us. Or worse, makes us regard ourselves as a foreign body, a stranger' (Page x). Within the frame of my story, research into the Hatayama Code phenomenon is driven by the hypothesis that within the expected, even familiar material of the Attention Symphony there exists a foreign body, a hidden truth that can be brought into the light. But the story's recalcitrance – on the level of narrative voice, wider context, and the precise nature of what's being experienced by listeners to the Attention Symphony – means any revelation has to do not with meaning or message, but with our inability to fully understand ourselves. What's brought into the light is not a truth, not a message 'to ourselves, about ourselves', but the extent to which we remain strangers to ourselves – and if 'The Hatayama Code'

does read as an uncanny fiction, perhaps its uncanniness resides in its capacity to unsettle any expectation that our actions and motivations can ever be illuminated.

For all its carefully constructed opacity, I wrote this story in part as an attempt to illuminate something about my own existence as a digital human, in its 'least satisfactory aspects ... Certain compulsive, repetitious behaviours. A hollowing, or loss of self. A sense of dispersion, diminution, fragmentation' ('The Hatayama Code'). But the story is not in the business of supplying answers. Is not determinate, but interrogative; "not fact but artefact" (Webb and Brien 12). However close it may come to a promised revelation – one, perhaps, 'whose shape we recognise, which balances on the tip of the tongue' ('The Hatayama Code')– finally, it stops short of any such completion.

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